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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,784	11/28/2001	Akira Yamamoto	P21675	8367

7055 7590 06/20/2005

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EXAMINER	
BELYAVSKYI, MICHAIL A	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	Application No. 09/994,784	Applicant(s) YAMAMOTO ET AL.	
	Examiner Michail A. Belyavskyi	Art Unit 1644	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 10 June 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: ---.
   Claim(s) objected to: ---.
   Claim(s) rejected: *3-15 and 31*.
   Claim(s) withdrawn from consideration: ---.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see below.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☐ Other: _____.

2.0.0

1. Claims 3 - 15 and 31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano et al (GB 2282548) or Mitoh et al (GB2307552, IDS) each in view of Nakayama et al (US Patent 5,827,669) and further in view of Jonson et al (US Patent 4,885,207) for the same reasons set forth in the Previous Office Action, mailed 03/11/05

Applicant's arguments, filed 06/10/05 have been fully considered, but have not been found convincing.

Applicant asserts that : (i) neither GB'548 nor GB '552 teaches or suggests a carrier wherein the antigens or antibodies are immobilized to the surface of the carrier through their portion that are irrelevant to the antigen-antibody reaction like the present invention; (ii) although GB'548 disclosed bonding between ligans and antiligands , the antibodies are immobilized to the carrier before blocking is carried out and this process is distinguished from the present invention where the blocking is provided after the antiligand is provided, (iii) there is no motivation in the prior art to combine the disclosed documents; (iv) the Examiner makes a naked assertion that casein is a metallic protein that can be treated to remove or reduced the metallic ion.

Contrary to Applicant's assertion it is the Examiner position, that the prior art teaches that antigens or antibody are immobilized to the surface of the carrier through their portion that are irrelevant to the antigen-antibody reaction. Applicant's attention is respectively drawn, for example, to page 3 of the GB'548. GB'548 explicitly teaches that the present invention is to provide a diagnostic agent wherein antibody or antigen are immobilized to the surface of the carrier, wherein said diagnostic agent can be used in the antigen-antibody reaction with high degree of sensitivity, reproducibility and reliability. In other words, the invention of GB'548 was that antigens or antibodies are immobilized to the surface of the carrier through their portion that are irrelevant to the antibody-antigen reaction. The whole purposed of the diagnostic agent taught by GB'548 is to immobilized antigens or antibodies through the irrelevant portion, thus maintaining the relevant portion of said antigens or antibodies for high bonding ability in the samples to be diagnosed.

In response to applicant's arguments that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine 5 USPQ2d 1596 (Fed. Cir 1988) and In re Jones 21 USPQ2d 1941 (Fed. Cir. 1992. The strongest rationale for combining reference is a recognition, expressly or implicitly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent that some advantage or expected beneficial result would have been produced by their combination In re Sernaker 17 USPQ 1, 5-6 (Fed. Cir. 1983) see MPEP 2144.

With regards to the examiner comments that casein is a metallic protein. It is noted that said statement is not a "naked assertion" as affirmed by Applicant, but rather based on the disclosure of the instant specification wherein it was explicitly stated that casein is well known to be one of the metallic proteins that can be treated to remove or reduced the metallic ion (see page 20 in particular). However, as was stated in the previous Office Action, both the prior art and the instant specification use casein only as a blocking agent. In other words both the prior art and the instant application only used casein to cover the portion of the surface of the carrier to prevent unspecific bonding to the carrier and the Specification does not teaches any advantage of using treated casein as a blocking agent compared to untreated casein. In addition, is noted that the instant claims are drawn to a product i.e. a carrier having immobilized antigen or antibodies and the patentability of the product does not depend on its method of production. In re Thrope,227 USPQ 964,966 (Fed. Cir. 1985). See MPEP 2113. GB '548 teaches a carrier having immobilized antibodies wherein antibodies are stabilized by treating the carrier with stabilizing agent and the cross-linking agent that is glutararaldehyde (see overlapping pages 18-19 in particular). GB '548 teaches a carrier, wherein carrier is produced by colliding porous particles of calcium phosphate (see pages 8, 10 and example 1 in particular). GB '548 teaches a carrier having a substantially spherical shape (see Fig.1 2 and 3 in particular).

GB '548 teaches a carrier having a surface formed of a calcium phosphate compound and antibody, immobilized on the surface through an irrelevant portion thereof, wherein the carrier surface has a portion wherein the antibodies are not immobilized and at least a part of the portion of the surface is coated with a protein having low interaction with antibodies (see entire document, Abstract in particular). GB '548 teaches several examples of said blocking protein , including casein, i.e. the same blocking protein that was used in the instant application. (see page 19 in particular). Though GB '548 does not explicitly teaches that casein has been a subject to a treatment for reducing the metallic ion , prior to use as a blocking agent, it is noted that GB '548 does not limited said blocking peptide to any particular type of casein, thus referenced casein can be treated to remove or reduce the metallic ion.

Similarly, GB'552 teaches a carrier having a surface formed of a calcium phosphate compound and antibody, immobilized on the surface through an irrelevant portion thereof, wherein the carrier surface has a portion wherein the antibodies are not immobilized and at least a part of the portion of the surface is coated with a protein having low interaction with antibodies (see entire document, Abstract in particular). GB'552 teaches several examples of said blocking protein , including casein, i.e. the same blocking protein that was used in the instant application. (see page 6 in particular). It is noted that GB '552 does not explicitly teaches that casein has been a subject to a treatment for reducing the metallic ion , prior to use as a blocking agent. However, it is noted that GB '552 does not limited said blocking peptide to any particular type of casein, thus referenced casein can be treated to remove or reduce the metallic ion. Moreover, both the prior art and the instant specification use casein only as a blocking agent. In other words both the prior art and the instant application only used casein to cover the portion of the surface of the carrier to prevent unspecific bonding to the carrier and the Specification does not teaches any advantage of using treated casein as a blocking agent compared to untreated casein. In addition, is noted that the instant claims are drawn to a product i.e. a carrier having immobilized antigen or antibodies and the patentability of the product does not depend on its method of production. In re Thrope,227 USPQ 964,966 (Fed. Cir. 1985). See MPEP 2113. GB'552 teaches a carrier having immobilized antibodies wherein antibodies are stabilized by treating the carrier with

stabilizing agent and the cross-linking agent that is glutararaldehyde (see page 6 in particular). GB'552 teaches a carrier, wherein carrier is produced by colliding porous particles of calcium phosphate (see pages 5, and examples 1 and 2 in particular). GB'548 and GB'552 do not teach a carrier wherein carrier has antiligands thereon and an antibody has a ligand boded thereto and antibody immobilized to the carrier through ligand/antiligand interaction, or wherein the antibodies are IgG .

US Patent '669 teaches a carrier, wherein said carrier have a surface which is formed of a calcium phosphate based compound with antiligands, such as avidin, or streptavidin being adsorbed and immobilized thereon (see entire document, Abstract and column 1, lines 30-68 and column 2, lines 40-60 in particular). US Patent '669 teaches an antibodies that have a ligand bonded thereto wherein a ligand is biotin that is immobilized to the carrier through biotin-avidin interaction (see, column 2, lines 1-5 and column 5, line 15-27 in particular). US Patent '669 teaches the avidin or streptavidin or derivatives thereof have a notable high affinityto a biotin and biotin can be easily bonded with antibody. Based on this specific properties a carrier was made in which antibody was immobilized with a good and right orientation. The good and right orientation is the result of the reaction between the avidin (antiligand) that was immobilized on the carrier and the biotinylated (ligand-bound) antibody. Using this carrier an easily and high sensitive detection can be performed (see column 5, lines 15-26 in particular). It is noted that the claimed "antiligans provided on and surrounding the surface of the carrier" would be an obvious properties of the carrier taught by '669 because the carrier is mixed with antiligand solution and would obviously be surrounded with antiligand.

US Patent '207 teaches a carrier having immobilized antibody, wherein antibody are IgG. (see entire document, column 7, lines 5-10 in particular). US Patent '207 teaches that there is a pragmatic need to maximized antibody loading and right orientation of said antibody on the carrier for optimizing process efficiency (see column 2, lines 1-15 in particular).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teaching of US Patent '669 and US Patent '207 to those of GB'548 or GB'552 to obtain a claimed carrier having immobilized antibodies wherein the carrier has antiligands thereon and antibody has a ligand bonded thereto and wherein antibody is immobilized to the carrier through the ligand and the antiligand interaction and wherein antibody is IgG.
One of ordinary skill in the art at the time the invention was made would have been motivated to do so, because there is a pragmatic need to maximized antibody loading and right orientation of said antibody on the carrier, including IgG, for optimizing process efficiency as taught by US Patent '207 and the good and right orientation is the result of the reaction between the avidin (antiligand) that was immobilized on the carrier and the biotinylated (ligand-bound) antibody as taught by US Patent '669 . This type of the carrier can substitute the carrier taught by GB'548 and GB'552 for easily and high sensitive detection.

From the combined teaching of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

No claim is allowed

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